

REMARKS

The application has been amended and is believed to be in condition for allowance.

Claim 16 was cancelled to address the drawing objection.

Claim 22 is new and recites the telescoping tubes which are not themselves recited in the previous claims but serve to assist in reciting the structure of the inventive clamping device and its operation.

The specification has been amended to add section headings and make formal amendments.

A review of the invention may prove useful. Figure 1 shows in a perspective view a clamping device of the invention without an outer tube.

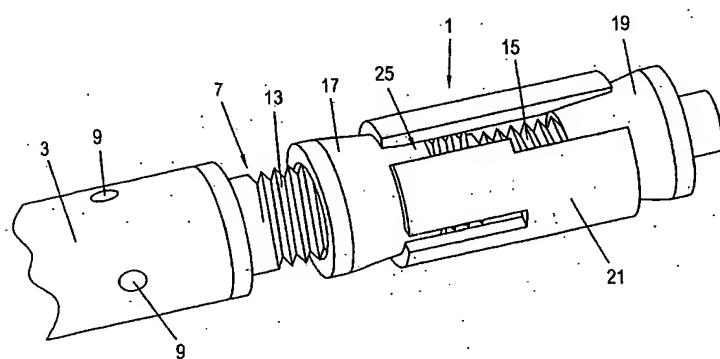


FIG. 1

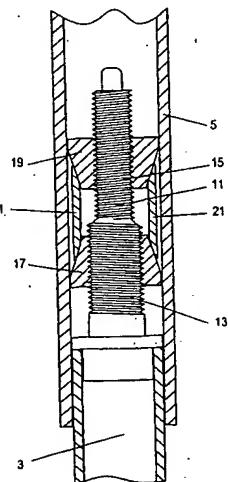


FIG. 3

As disclosed in published application paragraph [0016], the clamping device 1 of the invention is located on the end of tube 3 which is inserted into the outer tube 5 (Figure 3). By

moving the tubes 3 and 5 toward one another, the relative position of the tubes 3, 5 to one another can be changed so that the length of, e.g., a sports pole can be set to a currently desired value.

As shown a threaded part 7 is fixed to the tube 3 by notches 9 and comprises a threaded rod 11 which projects over the tube 3 has two sections 13 and 15 with opposite threads (oppositely threaded threads). The thread of the section 13 is made with a larger diameter than the thread of the threaded section 15. Two conical expansion bodies 17 and 19 have internal threads corresponding to the threads of sections 13 and 15 respectively.

As per paragraph [0019], between the expansion bodies 17 and 19 there is a radially expandable (widenable) clamping part 21 which the conical expansion bodies 17 and 19 engage with their smaller diameter ends. The clamping part 21 is a cylinder tube with recesses 23 which lead roughly to the lengthwise center from the two sides. The recesses 23 on one end are preferably arranged offset relative to the recesses 23 on the other end. The clamping part 21 further includes continuously slot 25. Thus the clamping part 21 can be radially expanded under the action of the expansion bodies 17 and 19.

As per paragraph [0020], the clamping device 1 engages the interior of an outer tube 5, the greater diameter ends of the expansion bodies 17 and 19 are dimensioned to frictional engage

the inner surface of the outer tube 5. When the tube 3 is turned relative to the other tube 5, for a corresponding direction of rotation the expansion bodies 17 and 19 are caused to approach one another and penetrate further into the ends of the clamping part 21 to widen the clamping part 21 radially over its length until it securely adjoins the inner surface of the outer tube 5 such that it can no longer be shifted relative to the other tube 3.

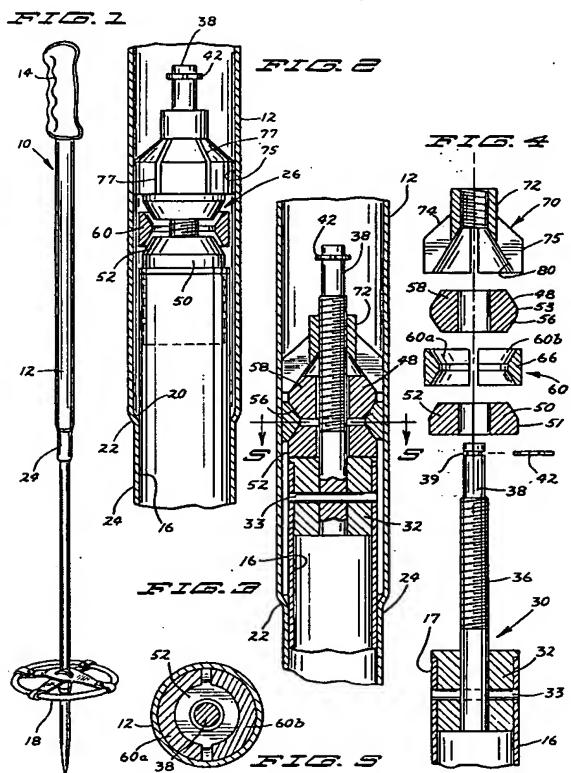
Figure 4 shows an embodiment within the expansion body 17 is not movable, but stationary.

In summary, in order to fix the position of telescoping tubes 3 and 5 of poles, relative to one another, there is a clamping device 1 within the tubes 3 and 5. The expansion bodies 17 and 19 are screwed onto a threaded rod 11 with opposite threaded sections 13 and 15. By relative turning of the tubes 3 and 5 to one another the expansion bodies 17 and 19 penetrate into the clamping part 21 from the two ends of the clamping part 21 for a correspondingly chosen direction of rotation and widen it radially over its entire length so that with a friction connection it adjoins the inside surface of the outer tube 5 and thus fixes the length of the pole once it has been set.

Claims 13 and 15-19 were rejected as anticipated by HINNERS 4,134,703.

Applicant respectfully disagrees.

The HINNERS Abstract discloses a locking structure in which one pole has an upstanding bolt, carried on the bolt are a pair of frusto conical members having their tapered portions in facing engagement and being moveable along of the bolt, disposed between said frusto conical members is a split ring having angled or beveled inner surfaces corresponding to the adjacent tapered faces of the frusto conical members and an expandible nut threaded onto the bolt having a body portion compressible to have a pressure fit within the other of the poles and a locking washer holding the same onto the bolt.



Rotation of pole in which the expanding member is disposed will move the expanding member downwardly of said bolt

causing the frusto conical members to move toward each other thereby expanding the split ring therebetween causing the split ring to move outwardly into locking engagement with the adjacent wall surface of the first mentioned pole.

As is clear from the drawings, the structure of HINNERS is different from that of the invention. Further, as outlined in the HINNERS Abstract, the operation of the HINNERS device is different than the present invention. This arises from HINNERS failing to disclose (as per the present invention and as originally recited) a threaded rod (11) comprising two threaded sections (13, 15), the two threaded sections having opposing threads. The threads of HINNERS are all the same. No matter where the bolt of HINNERS is "sectioned" to define two parts, each part has the same threads and therefore there is no teaching of two oppositely threaded sections.

Accordingly, claim 13 and its depending claims are not anticipated for this reason along.

Further HINNERS discloses (Figure 4) extending upwardly of the lower pole portion 16 is the threaded shank 36, slidably disposed upon the bolt 30 to move freely thereon are a pair of wedge members 48 and 50. Note that these wedge members are not screwed onto the threaded shank 36.

HINNERS discloses that the tapered portions 52 and 56 are mirror images of one another, disposed in opposed relation, and having disposed therebetween a wedging ring 60 having an

annular internal or bore portion 66 to mate with the adjacent tapered portions 52 and 56. The ring 60 is split to form two half circular portions 60a and 60b.

Carried at the upper end of the bolt is an operating member 70 having a threaded boss 72 and an annular skirt portion 74 extending around and depending from the boss having side wall portions 75 engaging the inner surface of the pole portion 12. The skirt portion has a plurality of longitudinal slits 77 circumferentially spaced thereabout whereby the skirt portion is compressible to be held within said upper pole portion 12 by a pressure fit. The operating member 70 has a frictional or pressure fit engagement with the inner surface of the upper pole portion 12 and rotates with the said upper pole portion.

In rotating in one direction, the operating member 70 will move downwardly of said bolt 30 having partially therein the upper tapered portion 58 of said wedge member 48 and in moving said wedge member downwardly toward the stationary wedge member 50, the split ring portion 60a and 60b therebetween are forced apart and are urged against the inner surface of said upper pole portion 12 for a locking engagement therewith.

Clamping part 70 engages the outer tube, but part 50 does not engage the interior of the outer tube. Thus, parts 50, 70 do not both engage the interior of the outer tube.

Parts 50, 70 are on each side of ring portion 60. Rotating part 70 moves part 70 toward part 50, but part 50 itself does not move.

Thus, HINNERS does not disclose the recite:

- the two threaded sections having opposing threads,
- two conical expansion bodies (17, 19) located at respective ones of two opposite ends of the clamping part (21) wherein the expansion bodies (17, 19) are each threaded onto a different one of the threaded sections (13, 15) of the threaded rod (11), and

- in use, the expansion bodies (17, 19) engage an interior of an outer tube (5) of the set of telescoping tubes (3, 5), turning the inner tube (3) relative to the outer tube (5) causes the expansion bodies (17, 19) to approach one another to widen the clamping part (21) radially, over a length of the clamping part (21). Further, there is no teaching of turning the inner tube (3) relative to the outer tube (5) causes each of the expansion bodies (17, 19) to each move along each of the respective sections of the threaded rod to approach one another and widen the clamping part (21).

In HINNERS, parts 50, 70 are on each side of ring portion 60. Rotating part 70 moves part 70 toward part 50, but part 50 itself does not move.

Thus, HINNERS does not anticipate.

Withdrawal of the rejection and allowance of all the claims are requested.

Claims 4, 20, and 21 were rejected as obvious in further view of DIXON 4,867,625.

Applicant respectfully disagrees.

The stated motivation does not appear viable and further the proposed modification has not been shown to work with the HINNERS device. Consider the impact of two shaft diameters on the sliding action of members 50, 60, and 58.

Withdrawal of this rejection is also solicited.

New claims 23-26 are patentable for the reasons discussed above.

More particularly, the applied references do not teach a combination that includes "a threaded rod (11), projecting from the threaded part (7), with two threaded sections (13, 15) with opposing threads," "the thread of a first of the two threaded sections (13) having a larger diameter than the opposing thread of a second of the two threaded sections (15);" "two conical expansion bodies (17, 19), having internal threads respectively corresponding to the threads of two threaded sections (13, 15), threaded onto each of the two threaded sections;," and "wherein, greater diameter ends of the two expansion bodies (17, 19) are each dimensioned to frictionally engage an inner surface of another tube (5) having a second interior diameter greater than the first interior diameter."

As to claim 24, the references do not teach "moving the tube (3) relative to the another tube (5) causing each of the two expansion bodies (17, 19) to move on the threaded sections (13, 15) to approach one another and to widen the clamping part 21 radially."

As to claim 25, the references do not teach "a threaded rod (11) with two oppositely threaded sections (13, 15), two expansion bodies (17, 19) each threaded onto one of the two oppositely threaded sections (13, 15), the two expansion bodies each engaged with a second of the two tubes, wherein, by relative turning of the two tubes (3, 5) the two expansion bodies (17, 19) penetrate into the clamping part (21) from two ends of the clamping part (21) to radially widen the clamping part over an entire length of the clamping part."

As to claim 26, the references do not teach "a thread of a first of the two threaded sections (13) has as larger diameter than an oppositely thread of a second of the two threaded sections (15)."

Thus, each of these claims is believed patentable.

Allowance of all the claims is solicited.

Should there be any matters that need to be resolved in the present application; the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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